

Long Beach Island Consolidated School District Curriculum Guide

Original Adoption:	August 2024
Created by:	Ocean County Curriculum Consortium: Jennifer Taubel, Amanda Lodato, Carrie Parent, Susan Myers
Revised on:	August 2024
Revised by:	Cathy McBride and Laura Daly

Long Beach Island Consolidated School District 6th Grade Math Curriculum	
Content Area: Mathematics	
Course Title: 6th Grade Mathematics	Grade Level: 6th
Unit 1: Expressions and Equations	31 Days
Unit 2: Decimals and Fractions	26 Days
Unit 3: Ratio Reasoning	22 Days
Unit 4: Ratio Reasoning	22 Days
Unit 5: Algebraic Thinking	26 Days
Unit 6: Positive and Negative Numbers	28 Days
Unit 7: Statistical Thinking	25 Days

Long Beach Island Consolidated School District Curriculum Guide

Alignment with State Mandates

The following colors are used throughout this document to indicate areas in which the curriculum is aligned with the following NJSA requirements:

- Holocaust and genocides ([N.J.S.A. 18A:35-28](#))
- History and contributions of African-Americans (Amistad Law) ([N.J.S.A. 18A:35-4.43](#))
- Highlight and promote diversity and inclusion (Diversity & Inclusion Law) ([N.J.S.A. 18A:35-4.36a](#))
- History of disabled and LGBT persons included in middle and high school curriculum ([Section 18A:35-4.35](#))
- Climate Change - to prepare students to understand how and why climate change happens, the impact it has on our local and global communities and to act in informed and sustainable ways. Please [click here](#) for specific examples (by subject).

Introduction

Effective mathematics education provides students with a balanced instructional program. In such a program, students become proficient in basic computational skills and procedures, develop conceptual understanding, and become skilled at problem solving. Standards-based mathematics instruction starts with basic material and increases in scope and content as the years progress. It is like an inverted pyramid, with the entire weight of the developing subject, including readiness for algebra, resting on the foundations built in the early grades.

In Grade 6, instructional time should focus on four critical areas: connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers; writing, interpreting, and using expressions and equations; and developing understanding of statistical thinking.

Long Beach Island Consolidated School District Curriculum Guide

Unit 1: Expressions and Equations	Duration: 31 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	
<p>Focus Standard: Geometry</p> <p>6.G.A.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p> <p>6.G.A.4 Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.</p> <p>6.EE.A.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.A.2a: Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$.</p> <p>6.EE.A.2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.</p> <p>6.EE.A.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.</p> <p>6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p> <p>6.EE.A.1: Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.NS.B.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole</p>	

Long Beach Island Consolidated School District Curriculum Guide

numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.

Supporting and Additional Standards

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.EE.A.2a: Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$.

6.EE.A.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.

6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.EE.A.3: Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.

6.EE.A.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.

6.EE.A.2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.

6.EE.A.1: Write and evaluate numerical expressions involving whole-number exponents.

Long Beach Island Consolidated School District Curriculum Guide

6.G.A.4 Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

MP.1	Make sense of problems and persevere in solving them	<ul style="list-style-type: none">● Find meaning in problems● Look for entry points● Analyze, conjecture and plan solution pathways● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?”
MP.2	Reason abstractly and quantitatively.	<ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems
MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others
MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems

Long Beach Island Consolidated School District Curriculum Guide

		<ul style="list-style-type: none">• Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)• Make sound decisions of which of these tools might be helpful
MP.6	Attend to precision.	<ul style="list-style-type: none">• Communicate precisely to others• Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes• Calculate accurately and efficiently
MP.7	Look for and make use of structure.	<ul style="list-style-type: none">• Discern patterns and structures• Can step back for an overview and shift perspective• See complicated things as single objects or as being composed of several objects

Primary Interdisciplinary Connections

Infused within the unit are connections to the NJSLs for Mathematics, Language Arts Literacy

- W.6.10 Write routinely over extended time frames (time for research, reflection, metacognition/self-correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
- SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

Computer Science and Design Thinking Standards

- 8.1.12.AP.2: Create clearly named variables that represent different data types and perform operations on their values.

Long Beach Island Consolidated School District Curriculum Guide

- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).
- 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.
- 9.2.8.CAP.7: Devise a strategy to minimize costs of postsecondary education.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.

Evidence of Student Learning

Performance Tasks/Use of Technology:

- Technology integration:
 - Interactive activities on Area of Parallelograms
 - Google Forms quizzes on Area of Triangles and Other Polygons
 - Webquests on Writing and Evaluating Algebraic Expressions
 - Kahoot games on Writing and Evaluating Expressions with Exponents
 - Quizlet review on Finding the Greatest Common Factor and Least Common Multiple
 - Socratic assessment on Area, Surface Area, and Algebraic Expressions
 - YouTube videos on Lesson Reviews: Area
 - Google Docs/Slides/Sites creation on Working with Algebraic Expressions
 - Flipgrid activities on Writing and Evaluating Expressions

Other Assessments

Formative

- Teacher Observation on Unit 1 Standards
- Exit Slips/Check for Understanding on Unit 1 Standards
- Games on Unit 1 Standards
- Anecdotal Records on Unit 1 Standards
- Oral Assessments/Conferencing on Unit 1 Standards
- Portfolio/Math Journal on Unit 1 Standards
- Daily Classwork on Unit 1 Standards
- Pre-Assessment on Unit 1 Standards
- Fluency Check on Unit 1 Standards
- Quick Quiz on Unit 1 Standards
- Student Activity Pages on Unit 1 Standards
- Standard-Based Performance Tasks on Unit 1 Standards

Summative

- Chapter Test on Unit 1 Standards
- SGO Test on Unit 1 Standards

Long Beach Island Consolidated School District Curriculum Guide

<ul style="list-style-type: none"> ○ I Ready ○ IXL Math Games on Using Nets to Find Surface 	<ul style="list-style-type: none"> ● Unit Test on Unit 1 Standards ● NJSLA Released Questions 6.EE.A., 6.EE.B, 6.NS.B, and 6.G.A.1 <p>Benchmark</p> <ul style="list-style-type: none"> ● District Approved Benchmark Assessment ● Teacher-developed/online assessments to track and monitor student growth over time ● State Standardized Test <p>Alternative</p> <ul style="list-style-type: none"> ● Unit Project on Finding the Area of Polygons and Surface Area of 3D Figures ● Unit Project on Writing and Evaluating Expressions ● Unit Portfolios on Area of Polygons and Surface Area of 3D Figures ● Unit Portfolios on Writing and Evaluating Expressions ● Teacher-created assessment on Evaluating Expressions using PEMDAS following 1:1 conference and/or review of student data/needs
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How do you know which operation to choose when solving a real-life problem? ● How can you use repeated factors in real life situations? ● What is the effect of inserting parentheses into a numerical expression? ● Without dividing, how can you tell whether a number is divisible by another number? 	<p>Unit Goals:</p> <ul style="list-style-type: none"> ● You can use what you know about the area of a rectangle to find the area of other two-dimensional figures and to find the surface area of three-dimensional figures. ● You can use what you know about writing, interpreting, and evaluating numerical expressions to understand working with algebraic expressions. ● You can apply your understanding of multiplication to

Long Beach Island Consolidated School District Curriculum Guide

- How can you find the greatest common factor of two numbers?
- How can you find the least common multiple of two numbers?
- How can you derive a formula for the area of a parallelogram?
- How can you derive a formula for the area of a triangle?
- How can you derive a formula for the area of a trapezoid?
- How can you find the lengths of line segments in a coordinate plane?
- How can you write and evaluate an expression that represents a real life problem?
- How can you write an expression that represents an unknown quantity?
- Does the order in which you perform an operation matter?
- How can you use mental math to multiply two numbers?

Enduring Understandings

- Order of Operations
- Rules for Division
- How to Evaluate an Exponent
- How to Identify a Prime and Composite Number
- The definition of GCF
- The definition of LCM
- How to use knowledge about areas of rectangles to find the areas of parallelograms and rhombuses.
- How to find the area of triangles.
- How to find the areas of special quadrilaterals.
- How to find the areas of polygons.
- How to find the areas of polygons on a coordinate plane.
- How to look for and use the structure of polygons to solve problems.

evaluate expressions that include exponents and to find the greatest common factor and least common multiple of two whole numbers.

Long Beach Island Consolidated School District Curriculum Guide

<ul style="list-style-type: none"> ● How to identify nets of solid figures. ● How to read and write algebraic expressions ● The definition of the following properties: commutative, associative, and distributive ● A variable represents a number in an algebraic expression ● Find the area of parallelograms. ● Find the area of triangles and other polygons. ● Identify and draw a net for a three-dimensional figure. ● Find the surface area of a three-dimensional figure. ● Write and evaluate algebraic expressions, ● Write and evaluate numerical and algebraic expressions, including those with whole-number exponents. ● Find the greatest common factor (GCF) and least common multiple (LCM) of two whole numbers to solve real-world problems. ● Actively participate in discussions by asking questions and rephrasing or building on classmates' ideas. 	
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> ● File Cabinet Activity ● 3 Act Task - Dollar Wall ● Visual Patterns ● Area of a Rectangle Activity - Grass is Greener ● Area of a Triangle & Parallelogram - Covering Ground ● 3 Act Task - Triangle Mystery 	<p>Resources for on-grade students:</p> <ul style="list-style-type: none"> ● Greatest Common Divisor ● Algebraic Expressions <p>Resources for students approaching grade level expectations:</p> <ul style="list-style-type: none"> ● Surface Area ● Greatest Common Factor <p>Resources for students exceeding grade level expectations:</p> <ul style="list-style-type: none"> ● One Variable Equations ● Digital Item Library

Long Beach Island Consolidated School District Curriculum Guide

Useful links / online resources:

- [New Meridian](#)
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <http://www.coolmath.com>
- <https://www.mobymax.com>
- <http://www.quizlet.com>
- <https://www.prodigygame.com/main-en/>

Suggested Options for Differentiation

English Language Learners:

- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Visual Cues/Models
- Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table)
- Technology Integrations

Special Education:

- Extra help opportunities provided
- Partial credit for late work
- Allow use of a calculator, when appropriate
- Modify length and time frame of assignments
- Provide guided notes and study guides as needed

Long Beach Island Consolidated School District Curriculum Guide

- Preferential Seating
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Use of manipulatives
- Small group instruction
- Instructional technology as needed/required
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities

Students with 504 Plans:

- Partial credit for late work
- Provide guided notes and study guides as needed
- Use of manipulatives
- Allow use of a calculator, when appropriate
- Instructional technology as needed/required
- Small group instruction
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Extra help opportunities provided
- Preferential Seating

Gifted and Talented:

- Extension activities
- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Student Choice Activities
- Student Drive Activities

Long Beach Island Consolidated School District Curriculum Guide

- Group Projects
- Tiered Activities

Students At Risk of School Failure:

- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Tiered Activities
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Modified Assignments
- Preferential Seating
- Visual Cues/Models
- Brain Breaks
- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Technology Integration
- Visual Cues/Models

Core Instructional and Supplemental Materials

Core Texts

- **enVision Mathematics 2020 Grade 6 Topics 3, 4, and 7**

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- [Khan Academy - Greatest Common Divisor](#)
- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>

Long Beach Island Consolidated School District Curriculum Guide

- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- Teacher generated material - on-grade level

Supplemental Texts for Students Approaching Grade Level Expectations

- [Khan Academy - GCD](https://www.khanacademy.com)
- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- Teacher generated material - approaching grade level

Supplemental Texts for Students Exceeding Grade Level Expectations

- Unit 1 NJSLA
- [Digital Item Library](https://www.digitalitemlibrary.com)
- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- <https://www.khanacademy.org/>
- <https://www.ixl.com/math>
- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Long Beach Island Consolidated School District Curriculum Guide

Please use the space below to record any notes / reflections after teaching the unit.

Unit 2: Decimals and Fractions

Duration: 26 Days

Standards/Learning Targets

Focus Standards (Major Standards)

Focus Standard: The Number System

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.NS.B.2 With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

6.NS.A.1: Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(\frac{2}{3}) \div (\frac{3}{4})$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(\frac{2}{3}) \div (\frac{3}{4}) = \frac{8}{9}$ because $\frac{3}{4}$ of $\frac{8}{9}$ is $\frac{2}{3}$. (In general, $(\frac{a}{b}) \div (\frac{c}{d}) = \frac{ad}{bc}$). How much chocolate will each person get if 3 people share $\frac{1}{2}$ lb of chocolate equally? How many $\frac{3}{4}$ -cup servings are in $\frac{2}{3}$ of a cup of yogurt? How wide is a rectangular strip of land with length $\frac{3}{4}$ mi and area $\frac{1}{2}$ square mi?

Focus Standard: Geometry

Long Beach Island Consolidated School District Curriculum Guide

6.G.A.2: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

Supporting and Additional Standards

6.EE.A.1: Write and evaluate numerical expressions involving whole-number exponents.

6.EE.A.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.

6.G.A.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.G.A.4 Represent three-dimensional figures (e.g., pyramid, triangular prism, rectangular prism) using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

6.NS.A.1: Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$). How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

MP.1 Make sense of problems and persevere in solving ● Find meaning in problems

Long Beach Island Consolidated School District Curriculum Guide

	them	<ul style="list-style-type: none">● Look for entry points● Analyze, conjecture and plan solution pathways● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?”
MP.2	Reason abstractly and quantitatively.	<ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems
MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others
MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems● Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)● Make sound decisions of which of these tools might be helpful
MP.6	Attend to precision.	<ul style="list-style-type: none">● Communicate precisely to others● Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes

Long Beach Island Consolidated School District Curriculum Guide

MP.7 Look for and make use of structure.

- Calculate accurately and efficiently
- Discern patterns and structures
- Can step back for an overview and shift perspective
- See complicated things as single objects or as being composed of several objects

Primary Interdisciplinary Connections

Infused within the unit are connections to the NJSLA for Mathematics, Language Arts Literacy

- NJSLA.SL.1. Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
- SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

Computer Science and Design Thinking Standards

- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).
- 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.
- 9.2.8.CAP.6: Compare the costs of postsecondary education with the potential increase in income from a career of choice.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.

Long Beach Island Consolidated School District Curriculum Guide

Evidence of Student Learning	
<p>Performance Tasks/Use of Technology:</p> <ul style="list-style-type: none"> ● Technology integration: <ul style="list-style-type: none"> ○ Interactive activities on Adding, Subtracting, and Multiplying Multi-Digit Decimals ○ Google Forms quizzes on Dividing Whole Numbers and Multi-Digit Decimals ○ Webquests on Understanding Division with Fractions ○ Kahoot games involving Dividing Fractions ○ Quizlet review on Solving Volume Problems with Fractions ○ Socrative assessment on Adding, Subtracting, and Multiplying Multi-Digit Decimals ○ YouTube videos on Dividing Whole Numbers and Multi-Digit Decimals ○ Google Docs/Slides/Sites creation involving Dividing Fractions ○ Flipgrid activities on Solving Volume Problems with Fractions 	<p style="text-align: center;">Other Assessments</p> <p>Formative</p> <ul style="list-style-type: none"> ● Teacher Observation on Unit 2 Standards ● Exit Slips/Check for Understanding on Unit 2 Standards ● Games on Unit 2 Standards ● Anecdotal Records on Unit 2 Standards ● Oral Assessments/Conferencing on Unit 2 Standard ● Portfolio/Math Journal on Unit 2 Standards ● Daily Classwork on Unit 2 Standards ● Pre-Assessment on Unit 2 Standards ● Fluency Check on Unit 2 Standards ● Quick Quiz on Unit 2 Standards ● Student Activity Pages on Unit 2 Standards ● Standard-Based Performance Tasks on Unit 2 Standards <p>Summative</p> <ul style="list-style-type: none"> ● Chapter Test on Unit 2 Standards ● SGO Test on Unit 2 Standards ● Unit Test on Unit 2 Standards ● NJSLA Released Questions 6.NS.B.3, 6.NS.B.2, 6.NS.A.1*, and 6.G.A.2 <p>Benchmark</p> <ul style="list-style-type: none"> ● District Approved Benchmark Assessment ● Teacher-developed/online assessments to track and monitor student growth over time ● State Standardized Test <p>Alternative</p> <ul style="list-style-type: none"> ● Unit Project on Finding the Area of Polygons and

Long Beach Island Consolidated School District Curriculum Guide

	<p>Surface Area of 3D Figures</p> <ul style="list-style-type: none"> ● Diner Dash Unit Project involving Adding, Subtracting, Multiplying, and Dividing Decimals ● Unit Project involving Finding the Volume of Prisms ● Teacher-created assessment on Understanding Division with Fractions following 1:1 conference and/or review of student data/needs
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How can you divide a fraction by a fraction? ● How can you model division by a mixed number? ● How can you add and subtract multi-digit decimals? ● How can you divide multi-digit decimals? ● How can you multiply multi-digit decimals? ● How can you find the volume of a rectangular prism by packing it with cubes with unit fraction edge lengths? ● How can you find the volume of a rectangular prism with fractional edge lengths by using the formula $V = lwh$ or $V = Bh$? <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● How to add, subtract, and multiply multi-digit decimals using standard algorithms. ● How to divide multi-digit whole numbers and multi-digit decimals using standard algorithms. ● How to divide fractions. ● How to solve real-world problems that involve dividing fractions. 	<p>Unit Goals:</p> <ul style="list-style-type: none"> ● Knowing about place value and operations with whole numbers will help you understand how to add, subtract, multiply, and divide with decimals. ● You can use what you know about area models and partial quotients to make sense of an algorithm for dividing whole numbers and decimals. ● Division of fractions and mixed numbers can be thought of as forming equal groups to find the number of size of the groups. Knowing about the relationship between multiplication and division will help you divide with fractions.

Long Beach Island Consolidated School District Curriculum Guide

<ul style="list-style-type: none"> ● How to find the volume of a right rectangular prism with fractional edge lengths. ● How to use math vocabulary and precise language to describe a strategy and how that strategy is used to solve a problem. ● Add, subtract, and multiply multi-digit decimals using standard algorithms. ● Divide multi-digit whole numbers and multi-digit decimals using standard algorithms. ● Divide fractions. ● Solve real-world problems that involve dividing fractions. ● Find the volume of a right rectangular prism with fractional edge lengths. ● Use math vocabulary and precise language to describe a strategy and how that strategy is used to solve a problem. 	
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> ● Dividing Fractions Video: https://www.khanacademy.org/commoncore/grade-6-NS ● Dividing Fractions 3 Act Task - Salting a Driveway 	<p>Resources for on-grade students:</p> <ul style="list-style-type: none"> ● Dividing Decimals ● Volume Word Problems: Fractions and Decimals <p>Resources for students approaching grade level expectations:</p> <ul style="list-style-type: none"> ● Decimals ● Fractions & Decimals <p>Resources for students exceeding grade level expectations:</p> <ul style="list-style-type: none"> ● Illustrative Math - Banana Bread ● Desmos - Puzzling Area

Long Beach Island Consolidated School District Curriculum Guide

Useful links / online resources:

- <http://kutasoftware.com/>
- <http://www.coolmath.com>
- <https://www.mobymax.com>
- <http://www.quizlet.com>
- <https://www.ck12.org/student/>
- [Digital Item Library](#)
- [Released Items](#)
- [New Meridian](#)
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com

Suggested Options for Differentiation

English Language Learners:

- Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table)
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Visual Cues/Models
- Technology Integrations

Special Education:

- Use of manipulatives
- Small group instruction
- Instructional technology as needed/required
- Extra help opportunities provided
- Partial credit for late work

Long Beach Island Consolidated School District Curriculum Guide

- Modify length and time frame of assignments
- Provide guided notes and study guides as needed
- Preferential Seating
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities

Students with 504 Plans:

- Small group instruction
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Partial credit for late work
- Provide guided notes and study guides as needed
- Use of manipulatives
- Instructional technology as needed/required
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Extra help opportunities provided
- Preferential Seating

Gifted and Talented:

- Student Choice Activities
- Extension activities
- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Group Projects
- Tiered Activities

Long Beach Island Consolidated School District Curriculum Guide

Students At Risk of School Failure:

- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Visual Cues/Models
- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Tiered Activities
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Modified Assignments
- Preferential Seating
- Brain Breaks

Core Instructional and Supplemental Materials

Core Texts

- enVision Mathematics 2020 Grade 6 Topics 1 and 7

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- Teacher generated material - on-grade level
- STEM Projects
- Pick a Project

Long Beach Island Consolidated School District Curriculum Guide

Supplemental Texts for Students **Approaching** Grade Level Expectations

- [Partitive Division/Fair Shares with Fractional Quotients Activity](#)
- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.khanacademy.org/>
- Teacher generated material - approaching grade level

Supplemental Texts for Students **Exceeding** Grade Level Expectations

- [Unit 2 NJSLA](#)
- <https://www.multiplication.com>
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- <https://www.khanacademy.org/>
- <https://www.ixl.com/math>
- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Please use the space below to record any notes / reflections after teaching the unit.

Long Beach Island Consolidated School District Curriculum Guide



Unit 3: Ratio Reasoning	Duration: 22 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	
<p>Focus Standard: Ratios and Proportional Relationships</p> <p>6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”</p> <p>6.RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>6.RP.A.3a: Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p>	
Supporting and Additional Standards	
<p>6.RP.A.1: Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.”</p> <p>6.RP.A.3b: Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</p>	

Long Beach Island Consolidated School District Curriculum Guide

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

MP.1	Make sense of problems and persevere in solving them	<ul style="list-style-type: none">● Find meaning in problems● Look for entry points● Analyze, conjecture and plan solution pathways● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?”
MP.2	Reason abstractly and quantitatively.	<ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems
MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others
MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems● Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)

Long Beach Island Consolidated School District Curriculum Guide

MP.6	Attend to precision.	<ul style="list-style-type: none">• Make sound decisions of which of these tools might be helpful• Communicate precisely to others• Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes• Calculate accurately and efficiently
MP.7	Look for and make use of structure.	<ul style="list-style-type: none">• Discern patterns and structures• Can step back for an overview and shift perspective• See complicated things as single objects or as being composed of several objects

Primary Interdisciplinary Connections

Primary Interdisciplinary Connections: Infused within the unit are connections to the NJSLS for Mathematics, Language Arts Literacy

- W6.10 Write routinely over extended time frames (time for research, reflection, metacognition/self correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline- specific tasks, purposes, and audiences.
- SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others’ ideas and expressing their own clearly.
- NJSLSA.SL2. Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.

Computer Science and Design Thinking Standards

- 8.1.12.AP.2: Create clearly named variables that represent different data types and perform operations on their values.
- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype,

Long Beach Island Consolidated School District Curriculum Guide

graphical/technical sketch).

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.
- 9.2.8.CAP.7: Devise a strategy to minimize costs of postsecondary education.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.

Evidence of Student Learning

Performance Tasks/Use of Technology:

- Technology integration:
 - Interactive activities on Understanding Ratio Concepts
 - Google Forms quizzes on Finding Equivalent Ratios
 - Webquests on Using Part-to-Part and Part-to-Whole Ratios
 - Kahoot games on Understanding Ratio Concepts
 - Quizlet review on Finding Equivalent Ratios
 - Socrative assessment on Using Part-to-Part and Part-to-Whole Ratios
 - YouTube videos on Understanding Ratio Concepts
 - Google Docs/Slides/Sites creation on Finding Equivalent Ratios
 - Flipgrid activities on Using Part-to-Part and Part-to-Whole Ratios

Other Assessments

Formative

- Teacher Observation on Unit 3 Standards
- Exit Slips/Check for Understanding on Unit 3 Standards
- Games on Unit 3 Standards
- Anecdotal Records on Unit 3 Standards
- Oral Assessments/Conferencing on Unit 3 Standards

- Portfolio/Math Journal on Unit 3 Standards
- Daily Classwork on Unit 3 Standards
- Pre-Assessment on Unit 3 Standards
- Fluency Check on Unit 3 Standards
- Quick Quiz on Unit 3 Standards
- Student Activity Pages on Unit 3 Standards
- Standard-Based Performance Tasks on Unit 3 Standards

Summative

- Chapter Test
- SGO Test
- Unit Test
- NJSLA Released Questions 6.RP.A.1, 6.RP.A.3, 6.RP.A.3a

Long Beach Island Consolidated School District Curriculum Guide

	<p>Benchmark</p> <ul style="list-style-type: none"> ● District Approved Benchmark Assessment ● Teacher-developed/online assessments to track and monitor student growth over time ● State Standardized Test <p>Alternative</p> <ul style="list-style-type: none"> ● Unit Project on Writing Equivalent Ratios involving baking/cooking ● Unit Project involving Comparing Ratios between color combinations for a town painting ● Teacher-created assessment on Solving Ratio Problems Involving Parts and Wholes
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How can you represent a relationship between two quantities? ● How can you find two ratios that describe the same relationship? ● How can you compare two ratios? <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● How to use ratio language to describe a ratio relationship between two quantities, ● How to use ratio reasoning to solve real-world problems. ● How to identify and write equivalent ratios. ● How to represent equivalent ratios as points in the coordinate plane. ● How to use tables to compare ratios. 	<p>Unit Goals:</p> <ul style="list-style-type: none"> ● A ratio is a way to compare two quantities when there are a units of one quantity for every b units of the other. ● Equivalent ratios make the same comparison. You can use what you know about multiples and factors to find equivalent ratios. ● Reasoning about equivalent ratios can help you find the amount of one quantity when you know the amount of the other quantity.

Long Beach Island Consolidated School District Curriculum Guide

<ul style="list-style-type: none"> ● How to justify solutions to ratio problems by using ratio language and models, such as double number lines, table, tape diagrams, and coordinate planes. ● Use ratio language to describe a ratio relationship between two quantities. ● Use ratio reasoning to solve real-world problems. ● Identify and write equivalent ratios. ● Represent equivalent ratios as points in the coordinate plane. ● Use tables to compare ratios. ● Justify solutions to ratio problems by using ratio language and models, such as double number lines, tape diagrams, and coordinate planes. 	
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> ● Introduction to Ratios Video: https://www.khanacademy.org/math/pre-algebra/pre-algebra-ratios-rates/pre-algebra-ratios-intro/v/ratios-intro ● 3 Act Task - Split Time 	<p>Resources for on-grade students:</p> <ul style="list-style-type: none"> ● Evaluating Ratio Statements ● Double Number Lines and Equivalent Ratios <p>Resources for students approaching grade level expectations:</p> <ul style="list-style-type: none"> ● Ratios & Rates ● Ratios <p>Resources for students exceeding grade level expectations:</p> <ul style="list-style-type: none"> ● Equivalent Ratios Word Problems ● Bag of Marbles <p>Useful links / online resources:</p> <ul style="list-style-type: none"> ● www.khanacademy.org ● www.gimkit.com

Long Beach Island Consolidated School District Curriculum Guide

- <https://quizizz.com/>
- [Digital Item Library](#)
- <http://kutasoftware.com/>
- <http://www.coolmath.com>
- [Released Items](#)
- [New Meridian](#)
- www.kahoot.com
- <https://www.mobymax.com>
- <http://www.quizlet.com>

Suggested Options for Differentiation

English Language Learners:

- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Visual Cues/Models
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Manipulatives
- Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table)
- Technology Integrations

Special Education:

- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Extra help opportunities provided
- Partial credit for late work
- Allow use of a calculator, when appropriate
- Modify length and time frame of assignments
- Provide guided notes and study guides as needed

Long Beach Island Consolidated School District Curriculum Guide

- Preferential Seating
- Differentiated instruction
- Use of manipulatives
- Small group instruction
- Instructional technology as needed/required
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities

Students with 504 Plans:

- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Partial credit for late work
- Small group instruction
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Extra help opportunities provided
- Preferential Seating
- Provide guided notes and study guides as needed
- Use of manipulatives
- Allow use of a calculator, when appropriate
- Instructional technology as needed/required

Gifted and Talented:

- Group Projects
- Tiered Activities
- Extension activities
- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Student Choice Activities
- Student Drive Activities

Long Beach Island Consolidated School District Curriculum Guide

Students At Risk of School Failure:

- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Visual Cues/Models
- Brain Breaks
- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Tiered Activities
- Manipulatives
- Modified Assignments
- Preferential Seating
- Technology Integration
- Visual Cues/Models

Core Instructional and Supplemental Materials

Core Texts

- enVision Mathematics 2020 Grade 6 Topic 5

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- <https://www.multiplication.com>
- <https://www.khanacademy.org/>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>

Long Beach Island Consolidated School District Curriculum Guide

- Teacher generated material - on-grade level
- STEM Projects
- enVisions Mathematics Pick a Project

Supplemental Texts for Students Approaching Grade Level Expectations

- <https://www.multiplication.com>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.khanacademy.org/>
- www.gimkit.com
- <https://quizizz.com/>
- Teacher generated material - approaching grade level

Supplemental Texts for Students Exceeding Grade Level Expectations

- [Unit 3 and 4 NJSLA](#)
- <http://kutasoftware.com/>
- <https://www.khanacademy.org/>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Please use the space below to record any notes / reflections after teaching the unit.

Long Beach Island Consolidated School District Curriculum Guide



Unit 4: Ratio Reasoning	Duration: 22 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	
<p>Focus Standard: Ratios and Proportional Relationships</p> <p>6.RP.A.2: Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”</p> <p>6.RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>6.RP.A.3b: Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</p> <p>6.RP.A.3d: Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> <p>6.RP.A.3c: Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $30/100$ times the quantity); solve problems involving finding the whole, given a part and the percent.</p>	

Long Beach Island Consolidated School District Curriculum Guide

Supporting and Additional Standards

Supporting Standard:

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.RP.A.2: Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar.” “We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger.”

6.3 Active Citizenship in the 21st Century: All students will acquire the skills needed to be active, informed citizens who value diversity and promote cultural understanding by working collaboratively to address the challenges that are inherent in living in an interconnected world.

6.1.12.CivicsDP.5.a: Analyze the effectiveness of governmental policies and of actions by groups and individuals to address discrimination against new immigrants, Native Americans, and African Americans.

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

- | | | |
|------|--|--|
| MP.1 | Make sense of problems and persevere in solving them | <ul style="list-style-type: none">● Find meaning in problems● Look for entry points● Analyze, conjecture and plan solution pathways● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?” |
| MP.2 | Reason abstractly and quantitatively. | <ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems |

Long Beach Island Consolidated School District Curriculum Guide

MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others
MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems● Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)● Make sound decisions of which of these tools might be helpful
MP.6	Attend to precision.	<ul style="list-style-type: none">● Communicate precisely to others● Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes● Calculate accurately and efficiently
MP.7	Look for and make use of structure.	<ul style="list-style-type: none">● Discern patterns and structures● Can step back for an overview and shift perspective● See complicated things as single objects or as being composed of several objects

Long Beach Island Consolidated School District Curriculum Guide

Primary Interdisciplinary Connections

Infused within the unit are connections to the NJSLs for Mathematics, Language Arts Literacy

- W.6.10 Write routinely over extended time frames (time for research, reflection, metacognition/self-correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
- L.6.6. Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.
- SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

LGBTQ:

- 6.1.8.D.1.a Compare and contrast gender roles, religion, values, cultural practices, and political systems of Native American groups.
- 6.1.12.A.1.b Analyze how gender, property ownership, religion, and legal status affected political rights.
- 6.1.12.D.3.e Determine the impact of religious and social movements on the development of American culture, literature, and art.

Amistad:

- 6.2.12.D.1.c Analyze various motivations for the Atlantic slave trade and the impact on Europeans, Africans, and Americans.

Computer Science and Design Thinking Standards

- 8.1.12.AP.2: Create clearly named variables that represent different data types and perform operations on their values.
- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.2.8.ED.4: Investigate a malfunctioning system, identify its impact, and explain the step-by-step process used to troubleshoot, evaluate, and test options to repair the product in a collaborative team.
- 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.

Long Beach Island Consolidated School District Curriculum Guide

- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Evidence of Student Learning

Performance Tasks/Use of Technology:

- Technology integration:
 - Interactive activities on Understanding Rate Concepts
 - Google Forms quizzes on Using Unit Rates to Solve Problems
 - Webquests on Understanding Percents
 - Kahoot games on Using Percents to Solve Problems
 - Quizlet review on Understanding Rate Concepts
 - Socrative assessment on Using Unit Rates to Solve Problems
 - YouTube videos on Understanding Percents
 - Google Docs/Slides/Sites creation on Using Percents to Solve Problems
 - Flipgrid activities on Understanding Rate Concepts

Other Assessments

Formative

- Teacher Observation on Unit 4 Standards
- Exit Slips/Check for Understanding on Unit 4 Standards
- Games on Unit 4 Standards
- Anecdotal Records on Unit 4 Standards
- Oral Assessments/Conferencing on Unit 4 Standards
- Portfolio/Math Journal on Unit 4 Standards
- Daily Classwork on Unit 4 Standards
- Pre-Assessment on Unit 4 Standards
- Fluency Check on Unit 4 Standards
- Quick Quiz on Unit 4 Standards
- Student Activity Pages on Unit 4 Standards
- Standard-Based Performance Tasks on Unit 4 Standards

Summative

- Chapter Test
- SGO Test
- Unit Test
- NJSLA Released Questions 6.RP.A.2, 6.RP.A.3, 6.RP.A.3b, 6.RP.A.3d, 6.RP.A.3c

Benchmark

- District Approved Benchmark Assessment
- Teacher-developed/online assessments to track and monitor student growth over time
- State Standardized Test

Long Beach Island Consolidated School District Curriculum Guide

	<p>Alternative</p> <ul style="list-style-type: none"> ● Unit Project on Finding tip and tax percent on a restaurant bill ● Unit Project involving comparing unit prices at two local grocery stores ● Teacher-created assessment on Ratio Reasoning: Unit Rates and Percents following review of student data/needs
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How can you use rates to describe changes in real-life problems? ● How can you compare two rates? ● What is a unit rate? ● How can you convert measurements using rates? ● How can you find the percent of a number? ● How can you find what percent of one number is of another number? ● How can you find the whole when given a part and a percent? <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● Understand the concept of a rate. ● Use models to show and identify rates. ● Use rate language to describe a ratio relationship. ● Understand qualitative reasoning to compare rates. ● Understand that any ratio relationship can be used to write two rates. 	<p>Unit Goals:</p> <ul style="list-style-type: none"> ● A rate is a ratio that tells how many units of one quantity there are for every 1 unit of a second quantity. Knowing about rates can help you solve problems involving equivalent ratios. ● You can use a unit rate to find the amount of one quantity in a ratio relationship when you know the amount of the other quantity. ● A percent is a way of expressing a rate per 100. You can use what you know about ratios and rates to solve problems about percentages.

Long Beach Island Consolidated School District Curriculum Guide

- Use division to find unit rates.
- Solve unit rate problems, including problems involving constant speed and unit pricing.
- Use unit rates to find unknown values in equivalent ratios when three or four values are given.
- Use unit rates to compare two ratios.
- Use unit rates to convert measurement units.
- Understand that a percent is a rate per 100.
- Use models to show and identify percents in real-world contexts.
- Represent a percent as a fraction with a denominator of 100 or as a decimal.
- Use percents to compare ratios.
- Find a percent of a number.
- Find what percent one number is of another number.
- Find the whole, given a part and the percent.
- Compare rates to solve real-world problems.
- Use unit rates to find equivalent ratios.
- Convert measurement units using rates.
- Express a percent as a decimal or a fraction.
- Find a given percent of a number.
- Find what percent one number is of another number.
- Find the whole when given a part and a percent.
- Use math vocabulary and precise language to explain ratios, rates, and percents.

Instructional Plan

Suggested Activities

- [3 Act Task - Finals Week](#)
- [Finding & Using Unit Rates](#) - Exploring diverse tiling patterns from various cultures

Resources

- Resources for **on-grade** students:
- [Equivalent Ratios and Unit Rates](#)
 - [Rates Problems Practice](#)

Long Beach Island Consolidated School District Curriculum Guide

- [The Cherokee Tribe and Their Trail of Tears](#)
 - Uses unit rates and ratios to analyze the distances represented in a map of the route taken by the Cherokees on the Trail of Tears

Resources for students **approaching** grade level expectations:

- [Ratio Reasoning](#)
- [Unit Rates](#)

Resources for students **exceeding** grade level expectations:

- [Comparing Rates Practice](#)
- [Data Transfer](#)

Useful links / online resources:

- <http://www.quizlet.com>
- [Digital Item Library](#)
- <https://quizizz.com/>
- www.kahoot.com
- [Released Items](#)
- [New Meridian](#)
- www.gimkit.com
- <http://kutasoftware.com/>
- <http://www.coolmath.com>
- <https://www.mobymax.com>

Suggested Options for Differentiation

English Language Learners:

- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Visual Cues/Models
- Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table)
- Technology Integrations
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies

Long Beach Island Consolidated School District Curriculum Guide

- Graphic Organizers
- Manipulatives

Special Education:

- Tiered Activities
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Extra help opportunities provided
- Partial credit for late work
- Allow use of a calculator, when appropriate
- Modify length and time frame of assignments
- Provide guided notes and study guides as needed
- Preferential Seating
- Use of manipulatives
- Small group instruction
- Instructional technology as needed/required
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions

Students with 504 Plans:

- Partial credit for late work
- Provide guided notes and study guides as needed
- Use of manipulatives
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Extra help opportunities provided
- Preferential Seating
- Allow use of a calculator, when appropriate
- Instructional technology as needed/required

Long Beach Island Consolidated School District Curriculum Guide

- Small group instruction

Gifted and Talented:

- Student Choice Activities
- Student Drive Activities
- Group Projects
- Tiered Activities
- Extension activities
- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration

Students At Risk of School Failure:

- Tiered Activities
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Modified Assignments
- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Preferential Seating
- Visual Cues/Models
- Brain Breaks
- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Visual Cues/Models

Core Instructional and Supplemental Materials

Long Beach Island Consolidated School District Curriculum Guide

Core Texts

- enVision Mathematics 2020 Grade 6 Topics 5-6

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- Teacher generated material - on-grade level
- STEM Projects
- enVision Mathematics Pick a Project

Supplemental Texts for Students Approaching Grade Level Expectations

- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.khanacademy.org/>
- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- Teacher generated material - approaching grade level

Supplemental Texts for Students Exceeding Grade Level Expectations

- [Unit 3 and 4 NJSLA](#)
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- <https://www.ck12.org/student/>

Long Beach Island Consolidated School District Curriculum Guide

- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Please use the space below to record any notes / reflections after teaching the unit.

Unit 5: Algebraic Thinking

Duration: 26 Days

Standards/Learning Targets

Focus Standards (Major Standards)

Focus Standard: The Number System

6.NS.B.4: Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$.

Long Beach Island Consolidated School District Curriculum Guide

Focus Standard: Expressions and Equations

6.EE.B.5: Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6.EE.A.3: Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.

6.EE.A.4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.

6.EE.B.7: Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers.

6.EE.C.9: Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.

Supporting and Additional Standards

Supporting Standards:

6.EE.A.2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.

6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.EE.A.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.

Long Beach Island Consolidated School District Curriculum Guide

6.RP.A.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

6.NS.A.1: Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2/3) \div (3/4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2/3) \div (3/4) = 8/9$ because $3/4$ of $8/9$ is $2/3$. (In general, $(a/b) \div (c/d) = ad/bc$). How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $3/4$ -cup servings are in $2/3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3/4$ mi and area $1/2$ square mi?

6.NS.B.2 With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.EE.A.3: Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.

6.EE.B.5: Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6.G.A.2: Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = lwh$ and $V = Bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

- | | | |
|------|--|---|
| MP.1 | Make sense of problems and persevere in solving them | <ul style="list-style-type: none">● Find meaning in problems● Look for entry points● Analyze, conjecture and plan solution pathways |
|------|--|---|

Long Beach Island Consolidated School District Curriculum Guide

		<ul style="list-style-type: none">● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?”
MP.2	Reason abstractly and quantitatively.	<ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems
MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others
MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems● Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)● Make sound decisions of which of these tools might be helpful
MP.6	Attend to precision.	<ul style="list-style-type: none">● Communicate precisely to others● Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes● Calculate accurately and efficiently

Long Beach Island Consolidated School District Curriculum Guide

MP.7 Look for and make use of structure.

- Discern patterns and structures
- Can step back for an overview and shift perspective
- See complicated things as single objects or as being composed of several objects

Primary Interdisciplinary Connections

Infused within the unit are connections to the NJSLs for Mathematics, Language Arts Literacy

- W.6.10 Write routinely over extended time frames (time for research, reflection, metacognition/self correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.
- SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

Computer Science and Design Thinking Standards

- 8.1.12.AP.2: Create clearly named variables that represent different data types and perform operations on their values.
- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).
- 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Long Beach Island Consolidated School District Curriculum Guide

Evidence of Student Learning

Performance Tasks/Use of Technology:

- Technology integration:
 - Interactive activities on Writing and Identifying Equivalent Expressions
 - Google Forms quizzes on Understanding Solutions of Equations
 - Webquests on Writing and Solving One-Variable Equations
 - Kahoot games on Analyzing Two-Variable Relationships
 - Quizlet review on Writing and Identifying Equivalent Expressions
 - Socrative assessment on Understanding Solutions of Equations
 - YouTube videos on Writing and Solving One-Variable Equations
 - Google Docs/Slides/Sites creation on Analyzing Two-Variable Relationships
 - Flipgrid activities on Writing and Identifying Equivalent Expressions

Other Assessments

Formative

- Teacher Observation on Unit 5 Standards
- Exit Slips/Check for Understanding on Unit 5 Standards
- Games on Unit 5 Standards
- Anecdotal Records on Unit 5 Standards
- Oral Assessments/Conferencing on Unit 5 Standards
- Portfolio/Math Journal on Unit 5 Standards
- Daily Classwork on Unit 5 Standards
- Pre-Assessment on Unit 5 Standards
- Fluency Check on Unit 5 Standards
- Quick Quiz on Unit 5 Standards
- Student Activity Pages on Unit 5 Standards
- Standard-Based Performance Tasks on Unit 5 Standards

Summative

- Chapter Test
- SGO Test
- Unit Test
- NJSLA Released Questions 6.NS.B.4, 6.EE.B.5, 6.EE.A.3, 6.EE.A.4*, 6.EE.B.7, 6.EE.C.9

Benchmark

- District Approved Benchmark Assessment
- Teacher-developed/online assessments to track and monitor student growth over time
- State Standardized Test

Alternative

- Unit Project involving Modeling Equations with

Long Beach Island Consolidated School District Curriculum Guide

	<p>Two-Variable Relationships</p> <ul style="list-style-type: none"> Teacher-created assessment on Writing and Identifying Equivalent Expressions following review of student data/needs
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> How can you tell when expressions are equivalent? How do you find equivalent expressions? How does rewriting a word problem help you solve the word problem? How can you use addition or subtraction to solve an equation? How can you use multiplication or division to solve an equation? How can you write an equation in two variables? <p>Enduring Understandings</p> <ul style="list-style-type: none"> Identify when two expressions are equivalent. Write equivalent expressions. Determine whether a number is a solution of an equation and write equations with variables to represent real-world problems. Solve equations that represent real-world problems. Identify the independent variable and dependent variable in a relationship between two quantities. Write an equation to represent the relationship between an independent and dependent variable. 	<p>Unit Goals:</p> <ul style="list-style-type: none"> Writing expressions in different, but equivalent, forms can help you make sense of problems. You can perform the same operation on both sides of an equation and the two sides of the equation will still be equal. Solving an equation means finding a value of the variable that makes the equation true. You can use what you know about inverse operations to help you solve equations. Knowing about patterns can help you describe how two quantities vary with each other.

Long Beach Island Consolidated School District Curriculum Guide

<ul style="list-style-type: none"> ● Analyze the relationship between independent and dependent variables. ● Use math vocabulary and precise language to describe writing equivalent expressions and solving equations. ● Identify when two expressions are equivalent. ● Write equivalent expressions. ● Determine whether a number is a solution of an equation and write equations with variables to represent real-world problems. ● Solve equations that represent real-world problems. ● Identify the independent variable and dependent variable in a relationship between two quantities. ● Write an equation to represent the relationship between an independent variable and dependent variable. ● Analyze the relationship between independent and dependent variables. ● Use math vocabulary and precise language to describe writing equivalent expressions and solving equations. 	
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> ● Video - How to Solve One-Step Equations ● Desmos - Solving One-Step Equations 	<p>Resources for on-grade students:</p> <ul style="list-style-type: none"> ● Whole Numbers ● Model with One-Step Equations and Solve <p>Resources for students approaching grade level expectations:</p> <ul style="list-style-type: none"> ● Balancing Equations ● Solve Equations from Visual Models <p>Resources for students exceeding grade level expectations:</p> <ul style="list-style-type: none"> ● Equations & Inequalities

Long Beach Island Consolidated School District Curriculum Guide

- [Morning Walk](#)

Useful links / online resources:

- www.gimkit.com
- <https://www.ck12.org/student/>
- <https://quizizz.com/>
- [Released Items](#)
- [New Meridian](#)
- www.kahoot.com
- <http://kutasoftware.com/>
- <http://www.coolmath.com>
- [Digital Item Library](#)
- <https://www.mobymax.com>
- <http://www.quizlet.com>

Suggested Options for Differentiation

English Language Learners:

- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Multi-Sensory Instruction
- Graphic Organizers
- Visual Cues/Models
- Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table)
- Technology Integrations
- Flexible Grouping
- Small Group Instruction
- Peer Buddies

Special Education:

- Breakdown task into manageable units
- Differentiated instruction

Long Beach Island Consolidated School District Curriculum Guide

- Use of manipulatives
- Extra help opportunities provided
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Partial credit for late work
- Allow use of a calculator, when appropriate
- Modify length and time frame of assignments
- Provide guided notes and study guides as needed
- Preferential Seating
- Directions repeated clarified and reworded
- Small group instruction
- Instructional technology as needed/required

Students with 504 Plans:

- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Partial credit for late work
- Provide guided notes and study guides as needed
- Use of manipulatives
- Allow use of a calculator, when appropriate
- Instructional technology as needed/required
- Small group instruction
- Extra help opportunities provided
- Preferential Seating

Gifted and Talented:

- Extension activities
- Student Choice Activities
- Student Drive Activities

Long Beach Island Consolidated School District Curriculum Guide

- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Group Projects
- Tiered Activities

Students At Risk of School Failure:

- Tiered Activities
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Modified Assignments
- Preferential Seating
- Visual Cues/Models
- Brain Breaks
- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Technology Integration
- Visual Cues/Models

Core Instructional and Supplemental Materials

Core Texts

- **enVision Mathematics 2020 Grade 6 Topics 3, 4**

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- <https://www.ck12.org/student/>

Long Beach Island Consolidated School District Curriculum Guide

- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.multiplication.com>
- <https://www.ixl.com/math>
- Teacher generated material - on-grade level
- STEM Projects
- enVision Mathematics Pick a Project

Supplemental Texts for Students **Approaching** Grade Level Expectations

- <https://www.multiplication.com>
- <https://www.ixl.com/math>
- <http://kutasoftware.com/>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- Teacher generated material - approaching grade level

Supplemental Texts for Students **Exceeding** Grade Level Expectations

- [Equations NJSLA Prep](#)
- <http://kutasoftware.com/>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Please use the space below to record any notes / reflections after teaching the unit.

Long Beach Island Consolidated School District Curriculum Guide



Unit 6: Positive and Negative Numbers	Duration: 28 Days
Standards/Learning Targets	
Focus Standards (Major Standards)	
<p>Focus Standard: The Number System</p> <p>6.NS.C.5: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.</p> <p>6.NS.C.6: Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <p>6.NS.C.6a: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.</p> <p>6.NS.C.6b: Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p>6.NS.C.6c: Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p>	

Long Beach Island Consolidated School District Curriculum Guide

6.NS.C.7: Understand ordering and absolute value of rational numbers.

6.NS.C.7a: Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.

6.NS.C.7b: Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C .

6.NS.C.7c: Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.

6.NS.C.7d: Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

6.NS.C.8: Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

Focus Standard: Expressions and Equations

6.EE.B.5: Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

6.EE.B.8: Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

Focus Standard: Geometry

6.G.A.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

Supporting and Additional Standards

Supporting Standards

6.NS.C.5: Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g.,

Long Beach Island Consolidated School District Curriculum Guide

temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

6.NS.C.6c: Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

6.NS.C.7a: Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.

6.NS.C.7b: Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3\text{ }^{\circ}\text{C} > -7\text{ }^{\circ}\text{C}$ to express the fact that $-3\text{ }^{\circ}\text{C}$ is warmer than $-7\text{ }^{\circ}\text{C}$.

6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

6.NS.C.6a: Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.

6.NS.C.6b: Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.

6.NS.C.7c: Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $|-30| = 30$ to describe the size of the debt in dollars.

6.G.A.3: Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

6.G.A.1: Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.

6.1.12.HistorySE.14.a: Explore the various ways women, racial and ethnic minorities, the LGBTQ community, and individuals with disabilities have contributed to the American economy, politics and society.

Long Beach Island Consolidated School District Curriculum Guide

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

MP.1	Make sense of problems and persevere in solving them	<ul style="list-style-type: none">● Find meaning in problems● Look for entry points● Analyze, conjecture and plan solution pathways● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?”
MP.2	Reason abstractly and quantitatively.	<ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems
MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others
MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems● Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)

Long Beach Island Consolidated School District Curriculum Guide

MP.6	Attend to precision.	<ul style="list-style-type: none">• Make sound decisions of which of these tools might be helpful• Communicate precisely to others• Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes• Calculate accurately and efficiently
MP.7	Look for and make use of structure.	<ul style="list-style-type: none">• Discern patterns and structures• Can step back for an overview and shift perspective• See complicated things as single objects or as being composed of several objects

Primary Interdisciplinary Connections

Infused within the unit are connections to the NJSLs for Mathematics, Language Arts Literacy

- L.6.5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
- SL.6.1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.
- SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

Computer Science and Design Thinking Standards

- 8.2.8.ED.3: Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).
- 8.2.8.ED.4: Investigate a malfunctioning system, identify its impact, and explain the step-by-step process used to troubleshoot, evaluate, and test options to repair the product in a collaborative team.
- 8.2.8.ED.7: Design a product to address a real-world problem and document the iterative design process, including decisions made as a result of specific constraints and trade-offs (e.g., annotated sketches).

Long Beach Island Consolidated School District Curriculum Guide

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.
- 9.2.8.CAP.6: Compare the costs of postsecondary education with the potential increase in income from a career of choice.
- 9.2.8.CAP.7: Devise a strategy to minimize costs of postsecondary education.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.

Evidence of Student Learning

Performance Tasks/Use of Technology:

- Technology integration:
 - Interactive activities on Understanding Positive and Negative Numbers
 - Google Forms quizzes on Ordering Positive and Negative Numbers
 - Webquests on Understanding Absolute Value
 - Kahoot games on Writing and Graphing One-Variable Inequalities
 - Quizlet review on Understanding the Four-Quadrant Coordinate Plane
 - Socratic assessment on Solving Problems in the Coordinate Plane
 - YouTube videos on Understanding Positive and Negative Numbers
 - Google Docs/Slides/Sites creation on Ordering Positive and Negative Numbers
 - Flipgrid activities on Understanding Absolute Value

Other Assessments

Formative

- Teacher Observation on Unit 6 Standards
- Exit Slips/Check for Understanding on Unit 6 Standards
- Games on Unit 6 Standards
- Anecdotal Records on Unit 6 Standards
- Oral Assessment/Conferencing on Unit 6 Standards
- Portfolio/Math Journal on Unit 6 Standards
- Daily Classwork on Unit 6 Standards
- Pre-Assessment on Unit 6 Standards
- Fluency Check on Unit 6 Standards
- Quick Quiz on Unit 6 Standards
- Student Activity Pages on Unit 6 Standards
- Standard-Based Performance Tasks on Unit 6 Standards

Summative

- Chapter Test
- SGO Test
- Unit Test
- NJSLA Released Questions 6.NS.C.5, 6.NS.C.6, 6.NS.C.6a, 6.NS.C.6c, 6.NS.C.7, 6.NS.C.7a, 6.NS.C.7b, 6.NS.C.7c, 6.NS.C.7d, 6.EE.B.5, 6.EE.B.8, 6.NS.C.6b, 6.NS.C.8

Benchmark

Long Beach Island Consolidated School District Curriculum Guide

	<ul style="list-style-type: none"> ● District Approved Benchmark Assessment ● Teacher-developed/online assessments to track and monitor student growth over time ● State Standardized Test <p>Alternative</p> <ul style="list-style-type: none"> ● Unit Project <i>Real World Application of Writing and Solving Equations</i> <ul style="list-style-type: none"> ○ Hands-on: Modeling Equations with Two-Variable Relationships involving Movie theater tickets ○ Hands-on: Modeling Equations with Two-Variable Relationships involving wheel-chair access movie theater tickets compared to wheel-chair access sports stadiums tickets ● Teacher-created assessment on Writing and Identifying Equivalent Expressions following review of student data/needs
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How can you represent numbers that are less than zero? ● How can you use a number line to order real-life events? ● How can you use a number line to compare positive and negative fractions and decimals? ● How can you describe how far an object is from sea level? ● How can you graph and locate points that contain negative numbers in a coordinate plane? 	<p>Unit Goals:</p> <ul style="list-style-type: none"> ● You can use positive and negative numbers to describe quantities with opposite values. Every positive and negative number has both a distance and a direction from 0. A number's distances from 0 is called its absolute value. ● You can extend the number line to show and compare positive and negative rational numbers or their absolute values.

Long Beach Island Consolidated School District Curriculum Guide

Enduring Understandings

- How to plot integers and rational numbers on number lines to represent real-world contexts.
 - How to compare and order positive and negative numbers.
 - How to determine whether a number is a solution of an inequality.
 - How to write and graph inequalities to represent real-world contexts.
 - How to plot ordered pairs in four quadrants of the coordinate plane. Use absolute value to find the distance between points on a horizontal or vertical line.
 - How to solve problems about polygons in the coordinate plane.
 - How to listen carefully during discussion in order to understand and explain another person's ideas.
 - Plot integers and rational numbers on number lines to represent real-world contexts.
 - Compare and order positive and negative numbers.
 - Determine whether a number is a solution of an inequality.
 - Write and graph inequalities to represent real-world contexts.
 - Plot ordered pairs in four quadrants of the coordinate plane. Use absolute value to find the distance between points on a horizontal or vertical line.
 - Solve problems about polygons in the coordinate plane.
 - Listen carefully during discussion in order to understand and explain another person's ideas.
- An inequality with a variable can have infinitely many solutions. You can show the solution on a number line.
 - You can extend the coordinate plane to plot points with negative coordinates. Knowing about absolute values can help you find the distance between points.

Long Beach Island Consolidated School District Curriculum Guide

Suggested Activities	Resources
<ul style="list-style-type: none"> ● Character Graphing ● Finding Absolute Value Video ● Comparing Absolute Value Video 	<p>Resources for on-grade students:</p> <ul style="list-style-type: none"> ● Comparing Absolute Values ● Integers and Absolute Value <p>Resources for students approaching grade level expectations:</p> <ul style="list-style-type: none"> ● Intro to Absolute Value ● Points in the Coordinate Plane <p>Resources for students exceeding grade level expectations:</p> <ul style="list-style-type: none"> ● Negative Numbers ● https://www.ixl.com/math - positive & negative numbers <p>Useful links / online resources:</p> <ul style="list-style-type: none"> ● New Meridian ● www.gimkit.com ● https://quizizz.com/ ● Digital Item Library ● Released Items ● www.kahoot.com ● http://kutasoftware.com/ ● http://www.coolmath.com ● https://www.mobymax.com
Suggested Options for Differentiation	
<p>English Language Learners:</p> <ul style="list-style-type: none"> ● Manipulatives ● Build Background/Vocabulary ● Math Word Wall/Word Bank ● Visual Cues/Models ● Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table) 	

Long Beach Island Consolidated School District Curriculum Guide

- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Technology Integrations

Special Education:

- Use of manipulatives
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Extra help opportunities provided
- Partial credit for late work
- Allow use of a calculator, when appropriate
- Modify length and time frame of assignments
- Provide guided notes and study guides as needed
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Small group instruction
- Instructional technology as needed/required
- Preferential Seating

Students with 504 Plans:

- Use of manipulatives
- Partial credit for late work
- Provide guided notes and study guides as needed
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities

Long Beach Island Consolidated School District Curriculum Guide

- Extra help opportunities provided
- Preferential Seating
- Allow use of a calculator, when appropriate
- Instructional technology as needed/required
- Small group instruction

Gifted and Talented:

- Extension activities
- Group Projects
- Tiered Activities
- Opportunities for Critical Thinking
- Problem Solving/Design Challenges
- Technology Integration
- Student Choice Activities
- Student Drive Activities

Students At Risk of School Failure:

- Tiered Activities
- Manipulatives
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Modified Assignments
- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Brain Breaks
- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Technology Integration
- Visual Cues/Models
- Graphic Organizers

Long Beach Island Consolidated School District Curriculum Guide

- Chunking Information
- Preferential Seating
- Visual Cues/Models

Core Instructional and Supplemental Materials

Core Texts

- enVision Mathematics 2020 Grade 6 Topics 2, 4, 7

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- www.kahoot.com
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- <https://www.multiplication.com>
- <https://www.khanacademy.org/>
- www.gimkit.com
- <https://quizizz.com/>
- Teacher generated material - on-grade level
- STEM Projects
- enVision Mathematics Pick a Project

Supplemental Texts for Students Approaching Grade Level Expectations

- <https://www.multiplication.com>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <http://kutasoftware.com/>
- Teacher generated material - approaching grade level

Supplemental Texts for Students Exceeding Grade Level Expectations

- [NJSLA Practice](#)
- <https://www.ck12.org/student/>

Long Beach Island Consolidated School District Curriculum Guide

- <https://www.multiplication.com>
- <http://kutasoftware.com/>
- <https://www.khanacademy.org/>
- <https://www.ixl.com/math>
- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Please use the space below to record any notes / reflections after teaching the unit.

Unit 7: Statistical Thinking

Duration: 25 Days

Standards/Learning Targets

Focus Standards (Major Standards)

Focus Standards: Statistics and Probability

6.SP.A.1: Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages.

6.SP.A.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread,

Long Beach Island Consolidated School District Curriculum Guide

and overall shape.

6.SP.B.5: Summarize numerical data sets in relation to their context, such as by:

6.SP.B.5a: Reporting the number of observations.

6.SP.B.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

6.SP.B.5b: Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

6.SP.A.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

6.SP.B.5c: Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

6.SP.B.5d: Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

Supporting and Additional Standards

Supporting Standards:

6.SP.A.3: Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

6.SP.B.4: Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

6.SP.B.5c: Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

6.SP.A.2: Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

Long Beach Island Consolidated School District Curriculum Guide

6.SP.B.5a: Reporting the number of observations.

6.SP.B.5b: Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.

6.NS.B.2 With accuracy and efficiency, divide multi-digit numbers using the standard algorithm.

6.NS.B.3 With accuracy and efficiency, add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.

6.1.12.CivicsHR.11.a: Assess the responses of the United States and other nations to the violation of human rights that occurred during the Holocaust and other genocides.

The following Standards for Mathematical Practice and select New Jersey Student Learning Standards should be covered throughout the various units of the curriculum.

Standards for Mathematical Practices

MP.1	Make sense of problems and persevere in solving them	<ul style="list-style-type: none">● Find meaning in problems● Look for entry points● Analyze, conjecture and plan solution pathways● Monitor and adjust● Verify answers● Ask themselves the question: “Does this make sense?”
MP.2	Reason abstractly and quantitatively.	<ul style="list-style-type: none">● Make sense of quantities and their relationships in problems● Learn to contextualize and de-contextualize● Create coherent representations of problems
MP.3	Construct viable arguments and critique the reasoning of others.	<ul style="list-style-type: none">● Understand and use information to construct arguments● Make and explore the truth of conjectures● Recognize and use counterexamples● Justify conclusions and respond to arguments of others

Long Beach Island Consolidated School District Curriculum Guide

MP.4	Model with Mathematics.	<ul style="list-style-type: none">● Apply mathematics to problems in everyday life● Make assumptions and approximations● Identify quantities in a practical situation● Interpret results in the context of the situation and reflect on whether the results make sense
MP.5	Use appropriate tools strategically.	<ul style="list-style-type: none">● Consider the available tools when solving problems● Are familiar with tools appropriate for their grade or course (pencil and paper, concrete models, ruler, protractor, calculator, spreadsheet, computer programs, digital content located on a website, and other technological tools)● Make sound decisions of which of these tools might be helpful
MP.6	Attend to precision.	<ul style="list-style-type: none">● Communicate precisely to others● Use clear definitions, state the meaning of symbols and are careful about specifying units of measure and labeling axes● Calculate accurately and efficiently
MP.7	Look for and make use of structure.	<ul style="list-style-type: none">● Discern patterns and structures● Can step back for an overview and shift perspective● See complicated things as single objects or as being composed of several objects

Primary Interdisciplinary Connections

Infused within the unit are connections to the NJSLs for Mathematics, Language Arts Literacy

- RL.6.1. Cite textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text.

Long Beach Island Consolidated School District Curriculum Guide

- RI.6.7. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue
- SL.6.5. Include multimedia components (e.g., graphics, images, music, sound) and visual displays in presentations to clarify information.

Climate Change:

- 9.4.2.CT.1: Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem.

Holocaust:

- 6.1.12.D.3.e Determine the impact of religious and social movements on the development of American culture, literature, and art.

Computer Science and Design Thinking Standards

- 8.1.12.AP.2: Create clearly named variables that represent different data types and perform operations on their values.
- 8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.
- 8.2.8.ETW.4: Compare the environmental effects of two alternative technologies devised to address climate change issues and use data to justify which choice is best.

Career Readiness, Life Literacies, and Key Skills

- 9.1.8.FP.5: Determine how spending, investing, and using credit wisely contributes to financial well-being.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- 9.4.8.CT.1: Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change and use critical thinking skills to predict which one(s) are likely to be effective.
- 9.4.8.CT.2: Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
- 9.4.8.DC.8: Explain how communities use data and technology to develop measures to respond to effects of climate change (e.g., smart cities).

Long Beach Island Consolidated School District Curriculum Guide

Evidence of Student Learning	
<p>Performance Tasks/Use of Technology:</p> <ul style="list-style-type: none"> ● Technology integration: <ul style="list-style-type: none"> ○ Interactive activities on Understanding Statistical Questions and Data Distributions ○ Google Forms quizzes on Using Dot Plots and Histograms to Describe Data Distributions ○ Webquests on Interpreting Median and IQR in Box Plots ○ Kahoot games on Interpreting Mean and MAD ○ Quizlet review on Using Measures of Center and Variability to Summarize Data ○ Socrative assessment on Understanding Statistical Questions and Data Distributions ○ YouTube videos on Using Dot Plots and Histograms to Describe Data Distributions ○ Google Docs/Slides/Sites creation on Interpreting Median and IQR in Box Plots ○ Flipgrid activities on Interpreting Mean and MAD 	<p style="text-align: center;">Other Assessments</p> <p>Formative</p> <ul style="list-style-type: none"> ● Teacher Observation on Unit 7 Standards ● Exit Slips/Check for Understanding on Unit 7 Standards ● Games on Unit 7 Standards ● Anecdotal Records on Unit 7 Standards ● Oral Assessments/Conferencing on Unit 7 Standards ● Portfolio/Math Journal on Unit 7 Standards ● Daily Classwork on Unit 7 Standards ● Pre-Assessment on Unit 7 Standards ● Fluency Check on Unit 7 Standards ● Quick Quiz on Unit 7 Standards ● Student Activity Pages on Unit 7 Standards ● Standard-Based Performance Tasks on Unit 7 Standards <p>Summative</p> <ul style="list-style-type: none"> ● Chapter Test ● SGO Test ● Unit Test ● NJSLA Released Questions 6.SP.A.1, 6.SP.A.2, 6.SP.B.5a, 6.SP.B.4, 6.SP.B.5, 6.SP.B.5b, 6.SP.A.3, 6.SP.B.5c, 6.SP.B.5d <p>Benchmark</p> <ul style="list-style-type: none"> ● District Approved Benchmark Assessment ● Teacher-developed/online assessments to track and monitor student growth over time ● State Standardized Test <p>Alternative</p>

Long Beach Island Consolidated School District Curriculum Guide

	<ul style="list-style-type: none"> ● Unit Project <i>Real World Application</i> Climate Change <ul style="list-style-type: none"> ○ Students will research climate change and its impact over the years ○ Students will create a presentation using statistical questioning and measures of variability/center ○ Students will display their findings in an appropriate data display and explain the shape of distribution
Knowledge and Skills	
Content	Skills
<p>Unit Essential Questions</p> <ul style="list-style-type: none"> ● How can you tell whether a question is a statistical question? ● How can you find an average value of a data set? ● In what other ways can you describe an average of a data set? ● How can you describe the spread of a data set? ● How can you use distances between each data value and the mean of a data set to measure the spread of a data set? <p>Enduring Understandings</p> <ul style="list-style-type: none"> ● How to represent data in a frequency table, dot plot, and histogram. ● How to describe a set of data by its center, spread, and overall shape. ● How to summarize data by describing how the data were measured and their units of measurement. 	<p>Unit Goals:</p> <ul style="list-style-type: none"> ● Understanding data distributions can help you answer statistical questions. The data you collect to answer a statistical question are likely to vary. ● You can use what you know about the number line to organize a set of data. Graphs based on the number line can help you make sense of the data. ● You can summarize a data set by using a single number to describe a typical value and a single number to describe how spread out the data are. ● The measures you use to describe a data set depend on the statistical question you are trying to answer and on the characteristics of the data set. ● Represent data in a frequency table, dot plot, and histogram. ● Describe a set of data by its center, spread, and overall shape. ● Summarize data by describing how the data were measured and their units of measurement.

Long Beach Island Consolidated School District Curriculum Guide

<ul style="list-style-type: none"> ● How to represent data in a box plot. ● How to calculate median and IQR of a data set, then interpret them in different contexts. ● How to calculate the mean and MAD of a data set, then interpret them in different contexts. ● How to compare measures of center and variability, then choose measures of center and variability to summarize the data set. ● How to use math vocabulary and precise language to describe sets of data. 	<ul style="list-style-type: none"> ● Represent data in a box plot. ● Calculate median and IQR of a data set, then interpret them in different contexts. ● Calculate the mean and MAD of a data set, then interpret them in different contexts. ● Compare measures of center and variability, then choose measures of center and variability to summarize the data set. ● Use math vocabulary and precise language to describe sets of data.
Instructional Plan	
Suggested Activities	Resources
<ul style="list-style-type: none"> ● Illustrative Math: Identifying Statistical Questions ● Desmos: Finding the Mean with Balancing Bears ● Desmos: Human Stopwatch - Variability and MAD ● Concentration Camps Charts and Statistics <ul style="list-style-type: none"> ○ Discuss connections among the graphs, which graph is easiest to read ○ Discuss the measures of center to compare data about the estimated number of prisoners and survivors at the listed concentration camps 	<p>Resources for on-grade students:</p> <ul style="list-style-type: none"> ● Statistics ● Adaptive Practice - Mean ● Mean, Median, Mode Practice <p>Resources for students approaching grade level expectations:</p> <ul style="list-style-type: none"> ● Statistical Thinking ● Find the Mean Practice <p>Resources for students exceeding grade level expectations:</p> <ul style="list-style-type: none"> ● Statistics ● Data Analysis Task - Candy Bars <p>Useful links / online resources:</p> <ul style="list-style-type: none"> ● http://www.quizlet.com ● https://www.ck12.org/student/ ● Digital Item Library ● www.gimkit.com

Long Beach Island Consolidated School District Curriculum Guide

- <https://quizizz.com/>
- www.kahoot.com
- [Released Items](#)
- [New Meridian](#)
- www.khanacademy.org
- <http://kutasoftware.com/>
- <http://www.coolmath.com>
- <https://www.mobymax.com>

Suggested Options for Differentiation

English Language Learners:

- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Visual Cues/Models
- Multi-Sensory Instruction
- Flexible Grouping
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Manipulatives
- Number Chart/Supplemental Aids (Number line, Addition/Multiplication Table)
- Technology Integrations

Special Education:

- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Use of manipulatives
- Extra help opportunities provided
- Partial credit for late work
- Allow use of a calculator, when appropriate
- Modify length and time frame of assignments

Long Beach Island Consolidated School District Curriculum Guide

- Provide guided notes and study guides as needed
- Preferential Seating
- Small group instruction
- Instructional technology as needed/required
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities

Students with 504 Plans:

- Small group instruction
- Directions repeated clarified and reworded
- Breakdown task into manageable units
- Differentiated instruction
- Partial credit for late work
- Provide guided notes and study guides as needed
- Use of manipulatives
- Allow use of a calculator, when appropriate
- Instructional technology as needed/required
- Effective teacher questioning; ranging from fact recall to higher order critical thinking questions
- Tiered Activities
- Extra help opportunities provided
- Preferential Seating

Gifted and Talented:

- Extension activities
- Opportunities for Critical Thinking
- Group Projects
- Tiered Activities
- Student Choice Activities
- Student Drive Activities
- Problem Solving/Design Challenges
- Technology Integration

Long Beach Island Consolidated School District Curriculum Guide

Students At Risk of School Failure:

- Extended Time
- Multi-Sensory Instruction
- Flexible Grouping
- Build Background/Vocabulary
- Math Word Wall/Word Bank
- Modified Assignments
- Preferential Seating
- Visual Cues/Models
- Brain Breaks
- Number Chart/Supplemental Aids (Number Line, Addition/Multiplication Table)
- Technology Integration
- Small Group Instruction
- Peer Buddies
- Graphic Organizers
- Chunking Information
- Tiered Activities
- Manipulatives
- Visual Cues/Models

Core Instructional and Supplemental Materials

Core Texts

- **enVision Mathematics 2020 Topic 8**

Supplemental Texts / Materials for Students On-Grade / Meeting Expectations

- <https://www.multiplication.com>
- <http://kutasoftware.com/>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- <https://www.ixl.com/math>

Long Beach Island Consolidated School District Curriculum Guide

- Teacher generated material - on-grade level
- STEM projects
- enVision Mathematics Pick a Project

Supplemental Texts for Students Approaching Grade Level Expectations

- <https://www.multiplication.com>
- <http://kutasoftware.com/>
- <https://www.khanacademy.org/>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- Teacher generated material - approaching grade level

Supplemental Texts for Students Exceeding Grade Level Expectations

- [NJSLA Prep](#)
- <http://kutasoftware.com/>
- <https://www.ixl.com/math>
- www.gimkit.com
- <https://quizizz.com/>
- www.kahoot.com
- Teacher generated material - exceeding grade level

Teacher Notes: Texts listed above are suggestions and may be supplemented/substituted with other district-approved choices.

Unit Reflection

Please use the space below to record any notes / reflections after teaching the unit.

Long Beach Island Consolidated School District Curriculum Guide

